LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

Master's in finance

Master Final Work

Project

Equity Research:

Lowe's Companies Inc

Francisco José Cruz Pinto

October 2020

Master's in finance

Master Final Work

Project

Equity Research:

Lowe's Companies Inc

Francisco José Cruz Pinto

Supervisor:

Ana Isabel Ortega Venâncio

October 2020

Abstract

In this Equity Research, we chose Lowe's Companies Inc because it is one of biggest Home Improvement Companies in the world and with positive impact in its country as it is associated with many solidarity events.

We characterized Home Improvement retail as a market with many producers, similar products and dominated in USA by 2 companies: Lowe's and Home Depot.

To valuate Lowe's, we took as reference date 30/09/2020 and computed some different valuation methods in order to get the best valuation possible. In Discounted Cash Flow through Free Cash Flow to Firm where we get a price of 142$ per share, meaning a downside potential when compared with reference date of 14.2% being this our main valuation method. With relative valuation, using EV/EBITDA and P/E of Home Depot as well as with total payout method we get a lower share price than what we have in our reference date, 166$.

Main risks associated with Lowe's operations that we identified are brand reputation, difficulties in adapting to new challenges that may occur, volatility in foreign currencies and political decisions.

Taking this downside potential in consideration as a medium risk associated with this company, we recommend a sell position to investors.

Resumo

Para esta Equity Research escolhemos a Lowe's Companies Inc por ser uma das maiores empresas de retalho de produtos para habitação no mundo assim como por estar associada a várias iniciativas solidárias nos países onde opera.

Caracterizamos o setor de produtos para habitação como tendo vários produtores, produtos semelhantes, mas que nos Estados Unidos da América é dominado por 2 empresas: Lowe's e Home Depot.

Na avaliação da Lowe's a data de referência é 30/09/2020 e recorremos a vários métodos de atualização, de forma a obter uma recomendação o mais correta possível. No método dos Fluxos de caixa, através dos fluxos de caixa da empresa, obtivemos um preço de ação de 142$, que representa uma perda quando comparado com o preço da data de referência de 14.2%, sendo este o nosso principal método de avaliação. Com a avaliação relativa, através da utilização de EV/EBITDA e P/E da Home Depot, assim como com o método de pagamento total obtivemos preços de ação menores que a ação na data de referência, 166$.

Os principais riscos que identificamos associados à operação da Lowe's são a reputação da marca, dificuldades em enfrentar futuros desafios, volatilidade na moeda estrangeira e decisões políticas.

Tendo em consideração esta perda assim como o risco médio de investimento nesta empresa, a nossa recomendação é para os investidores venderem.

Acknowledgements

This project is, for sure, the biggest, most challenger and most enthusiastic I have ever done in my academic journey, and, at the same time, it represents the end of my Master's degree.

I would like to thank my family who supported, helped and motivated me to keep looking for information about Lowe's and write this Equity Research. I would also like to thank my friends who were important to share knowledge and keep mutual motivation, and my company which gave me some independence in order to keep my work and Equity Research updated.

Last but not least, I must refer my Professor Ana Venâncio for guidance during this pandemic time, which bring new difficulties to everyone.

Index

List of Figures

List of Tables

Industry: Home Improvement

Company: Lowe's Companies Inc

Research Snapchot

Recommendation: Sell Medium Risk	**Current Share Price: 166$**	**DCF Price Target: 142$**
Multiples Average Price target: 129$	**Total Payout Method Price Target:138$**	**Reference Date: 30/09/2020**

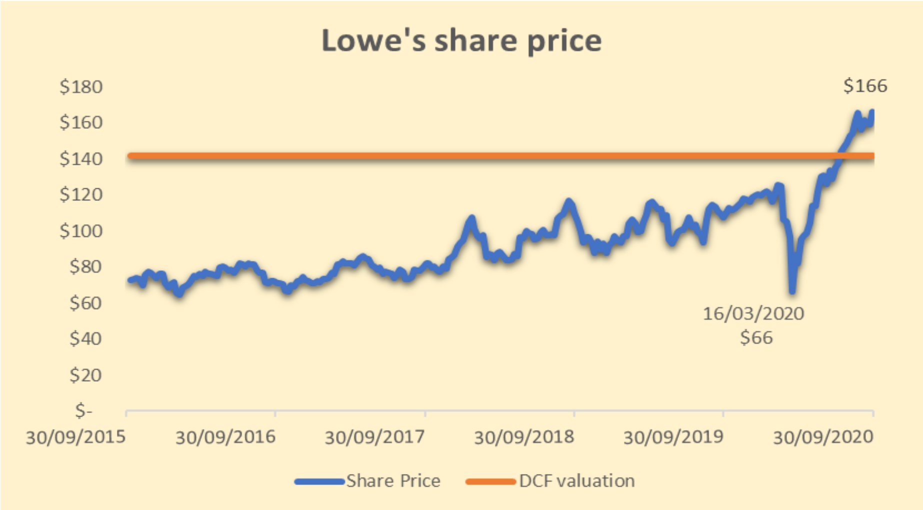

Figure 1 - Lowe's historical Share Price

We recommend to sell Lowe's Companies Inc (LOW) shares, as we have a share price of 142$ calculated by a Discounted Cash Model which when compared with share price of Lowe's at 30\09\2020 of 166$ represents a downside potential of 14.2%. Lowe's share price has been progressively increasing since 2015, but after the break that happened in every financial market due to covid-19 in March, Lowe's share price also fell and quoted at 66$ on 16th March. Since then it has an exponential growth, reaching 160$ per share in September. Lowe's share price was 125$ at 17th February, but few weeks after covid outbreak, Lowe's share price recovered surpassing its previous share price, and achieved 142$ per share, our price target, on 1st of June.

Valuation Methods	Absolute Value	Discount/ Premium
Share Price 30/09/2020	166	100%
DCF	142	-14.2%
Total Payout Method	138	-16.8%
Multiples Average	129	-22%

Table 1 - Valuation Methods

Market Profile	
Closing Price	166
1 year price range	66-166$
Average daily volume	3810973
Shares Outstanding	0.755B
Market Capitalization	125.333B
Dividend yield	1.24%

Table 2 - Market Profile

Covid-19 outbreak

Although the worldwide crisis affected economically several sectors, Home Improvement retail took advantage of this, because people were spending much more time at home and, consequently, were more available to improve their homes, increasing the company sales.

Lowe's leadership

Between 2017 and 2019 Lowe's sales grew 2.5% CAGR. In 2020-2024 period we estimate Lowe's sales growth at 1% in 2020 and at 2% for the remaining years, mainly in the USA, where the majority of its operations occur.

In the USA, Lowe's divides its customers with many competitors, although only Home Depot has a market share equivalent to Lowe's and it is predictable to continue this way with both companies leading this sector, even though Home Depot has pole position.

Business Description

Lowe's Companies Inc is an American retail company specialized in home improvement products founded in 1921 by Lucius Smith Lowe in North Carolina. Firstly, Lowe's was not only trading hardware and building materials, but also sewing notions, dry goods, horse tack, snuff products and groceries. After Lucius Smith Lowe's death, Carl Buchan assumed the leadership of Lowe's and in 1946 the company refocused the core business towards selling exclusively home improvement products, anticipating a big increase in construction after World War II. Lowe's became publicly held in 1961 and in 1979 became traded in New York Stock Exchange. In 2007 Lowe's starts expanding its business outside the United States to Canada. This expansion is consolidated 9 years after the beginning of operation by buying RONA, a Canadian home improvement retailer.

Nowadays, Lowe's is operating closely 2000 home improvement and hardware stores, which represents about 208 million square feet of retail selling space only in 2 countries. The distribution of stores includes 1728 over 50 states in the United States and 249 in Canada. Last years the company has exited its operations in Mexico as well as closed under performing stores in the US and Canada, resulting in an increase of sales per selling square feet.

As the number of hardware stores shows, the principal market of Lowe's is the United States. (Figure 2 and 3)

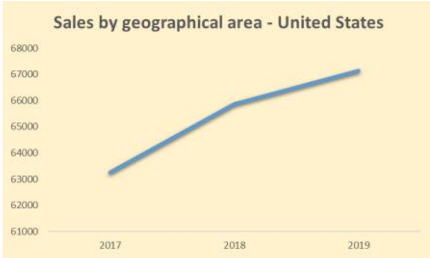

Figure 2 - USA sales per year

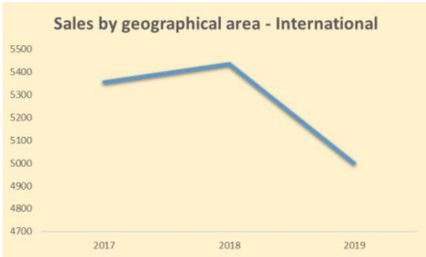

Figure 3 - International sales per year

In the case of Lowe's, most of its sales is from selling products which represented 95% of Sales in 2019. Revenues from services that the company provides through subcontractors for the installation of products, for instance, represented 3% of 2019 total Sales. These sales are not constant over the year, there is a seasonality trend as Lowe's identifies second fiscal quarter as the best quarter in terms of sales and the fourth as the worst. Indicators that may influence sales are related with real disposable income, employment, home prices and housing turnover. (Figure 4)

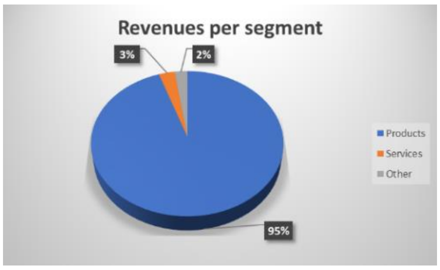

Figure 4 - Revenue per segment

Figure 5 presents the distribution of sales per product, where Appliances and Lumber & Building Materials are the outstanding products representing together close to 30% of net sales in 2018 and in 2019. These are products that provides more revenue for the company, others with relevant impact are Seasonal and Outdoor Living, Lawn & Garden and Rough Plumbing & Eletrical which represent 10% of Sales each.

Figure 5 – Most selling products

Strategies

Lowe's strategy consists of 4 initiatives: Merchandise excellence, Supply chain transformation, Operations Efficiency and Customer engagement.

Merchandise excellence is related with Lowe's aiming to provide a better counselling by enabling its associates to spend more time with customers or to improve in stores presentation.

Supply Chain Lowes plans to invest about 1,7 billion $ in its supply chain towards an omni channel ecosystem where e-commerce and physical stores and completely connected.

Operational Efficiency Lowe's pretends optimize labour hours, going from a 60% of payroll hours of tasking to 50% while 40% previously dedicated to selling increases to 50%.

Customer Engagement Lowe's will provide a training program for its associates as well as better equipment such as smart mobile devices with the aim of giving a better service to customers.

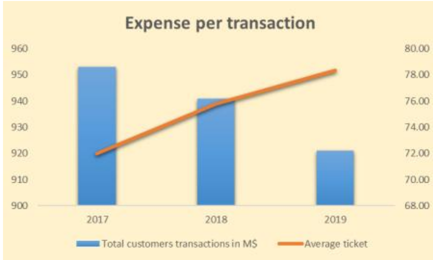

Figure 6 - Expense per Customers transaction

Key Drivers of Revenues

Key Drivers of Lowe's revenues are related with price sensitivity, Digital and customer service.

We classified the market as a monopolistic competition, therefore one of most important factors for a customer is the amount of money they have to spend for a product since there are similar products in the competition.

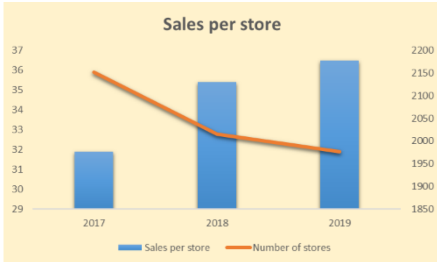

Figure 7 - Sales per store

Other factor, and which can mitigate in some way customers price sensitivity is customer service. This personalized service can be very important for many customers, but it is even more important in DIY products, as many of Lowe's products. For this reason, well-trained employees and a good department for post-purchase problems are important in customers decision process.

Even though physical stores are very important for this industry, digital can be important as well for customers, even more nowadays that people are afraid of going out to public stores, and an alternative way for customers to see and know more about the product. For this reason, it is important an intuitive website and with high level of fidelity in product characterization.

Key Drivers of Costs

Costs of Goods Sold represent a big share of costs in this industry, about 67% of Net Sales in Lowe's and similar portion for others big retailers in this industry. This cost is due to raw materials, many are natural resources like wood or marble which are expensive to acquire and also expenses associated with moving merchandise inventories from suppliers to stores. (Figure 8)

Figure 8 - COGS and SG&A of Lowe's in % of Sales

Selling and General & Administrative expenses have a significant share of Lowe's costs too, about 22%. These costs are related with well-trained staff and also occupancy costs of retail and corporate facilities, insurances plans or bank charges. Nevertheless, personnel training imply a better customer service which may lead to higher revenues.

Management and Corporate Governance

Lowes follows the Anglo-Saxon model of corporate governance which includes an executive board and a board of directors who is charged of the following committees: Audit Committee, Compensation Committee, Nominating and Governance Committee, Sustainability Committee and Technological Committee. Biggest shareholders of the company are Vanguard Group with 8.76% and BlackRock Inc with 7.41%.

Holder	% Out
Vanguard Group, Inc. (The)	8.76%
Blackrock Inc.	7.41%
State Street Corporation	4.57%
FMR, LLC	3.01%
Wellington Management Company, LLP	2.45%

Table 3 - Biggest Shareholders of Lowe's

Lowe's has paid dividends since 1961, and in the last years it started a share repurchase program

The Executive board is charged of reviewing, overseeing and guiding corporate strategy, and analyse the risks and opportunities that Lowe's may face, and it is composed by 9 members:

- **Marvin R Ellisson** is the president and CEO of Lowe's since July 2018. Previously, he was CEO from 2015 to 2018 and Chairman of the board from 2016 to 2018 on J.C. Penney Company, Inc. From 2014 to 2015 he was President of the same Company. He was Executive Vice President of US stores on The Home Depot Inc from 2008 to 2014.
- **William P. Boltz** is Executive Vice President charged of Merchandising since August 2018. From 2015 to 2018 he was President and CEO on Chervon North America, and previous to that he was President and owner of of The Boltz Group from 2013 to 2015.
- **David M. Denton** is Executive Vice President and CFO since November 2018. From 2010 to 2018 he was Executive Vice President and CFO of CVS Health Corporation.
- **Donald E. Frieson** is an Executive Vice President charged of Supply Chain since August 2018. From 2014 to 2017 he was Executive Vice President charged of Operations on Sam's Club and previous to that he was Senior Vice President charged of Replenishment, Planning and Real Estate on the same Club.
- **Seemantini Godbole** is an Executive Vice President Chief of Information Officer since November 2018. From 2017 to 2018 she was Senior Vice President charged of Technology and Digital on Target Corporation.
- **Ross W. McCanless** is an Executive Vice President charged of General Counsel and Corporate Secretary since 2017. Previously she was Chief Legal Officer, Secretary and Chief Compliance Officer from 2016 to 2017.
- **Joseph M. McFarland III** is an Executive Vice President charged of Stores since August 2016. Previously he was Executive Vice President and Chief Customer Officer on J.C. Penney Company, Inc in 2018.
- **Marisa F. Thalberg** is an Executive Vice President, Chief of Brand and Marketing Officer since February 2020.Previously she was Global Chief Brand Officer on Taco Bell Corporation from 2018 to 2020.
- **Jennifer L. Weber** is an Executive Vice President, Chief Human Resources since 2016. Previously she was an Executive Vice President

Individual or Entity	Shares Owned as of Transaction Date
BOLTZ WILLIAM P Officer	22,706
DENTON DAVID M Chief Financial Officer	32,400
ELLISON MARVIN R Chief Executive Officer	117,814
FRIESON DONALD E. Officer	16,856
GODBOLE SEEMANTINI Chief Technology Officer	25,085
MCCANLESS ROSS WILLIAM General Counsel	47,207
MCFARLAND JOSEPH MICHAEL III Officer	27,330
THALBERG MARISA F. Officer	10,726
WEBER JENNIFER L Officer	29,642

Table 4 - Number of Shares per Executive member

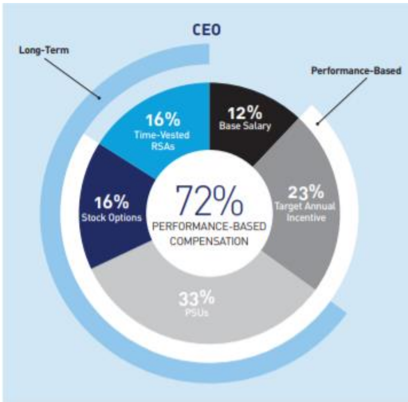

Figure 9 - CEO Salary

Source: Lowe's Annual Report

charged of External Affairs and Strategic Policy on Duke Energy Corporation from 2014 to 2016.

Even though the executive board has the duty to of review and discuss key risks, it also delegates certain risk oversight to committees who report regularly to the board. These committees and committee members are appointed by the board, at a minimum of 3 members. (Table 5)

Audit Committee reviews and pre-approves all audit and non-audit services, has the duty of overseeing the company's accounting and financial reporting processes and to discuss the major financial risks the company may face.

Compensation Committee reviews and approves the compensation for other executive officers, makes recommendations related with incentive compensations and has the duty of overseeing regulatory compliance and risk regarding compensation matters.

Nominating and Governance Committee identifies, evaluates and recommend directors to the board.

Sustainability Committee is charged of monitoring the company's performance against relevant external sustainability indices.

Technological Committee oversees matters of technology, e-commerce and innovation.

● Member

	Audit Committee	Compensation Committee	Nominating and Governance Committee	Sustainability Committee	Technology Committee
Raul Alvarez[1]		●		●	●
David H. Batchelder		●	●		
Angela F. Braly		●		Chair	●
Sandra B. Cochran		●			
Laurie Z. Douglas	●		●		Chair
Richard W. Dreiling					
Marvin R. Ellison					
Marshall O. Larsen[2]					
James H. Morgan	●		●		
Brian C. Rogers[3]	●		Chair		
Bertram L. Scott[4]	Chair		●		
Lisa W. Wardell	●			●	●
Eric C. Wiseman		Chair		●	●

Table 5 - Board of Directors

Source: Lowe's Annual Report

The members who belong to this board of directors are:

- **Raul Alvarez,** director since 2010 and previously Chief Operating Officer of McDonalds from 2006 until his retirement in 2009;
- **David H. Batchelder**, director since 2018 and founder, principal and member of investment committee at Relational Investors from 1996 to 2015;
- **Angela F. Braly,** director since 2013;
- **Sandra B. Chochran**, director of Lowe's since 2016 and previously President and CEO of Cracker Barrel Old Country Store since 2011;
- **Laurie Z. Douglas**, director since 2015 and previously Senior Vice President, Chief Information Officer and Chief Security Officer of Publix Super Markets from 2006 to 2018;
- **Richard W. Dreiling,** director since 2012 and CEO of Dollar General Corporation from 2008 until his retirement at 2015;
- **Marvin R. Ellison,** director since 2018 and actual CEO;
- **Brian C. Rogers,** director since 2018 and Chairman of T. Rowe Price Group Inc from 2007 until 2017;
- **Bertram L. Scott,** director since 2015 and previously Senior Vice President of Population Health and Value Based Care at Novant Health from 2015 until 2019;
- **Lisa W. Wardell**, director since 2018 and before appointed President and CEO at Adtalem Global Education in 2016;

- **Eric C. Wiseman** director since 2011 and Chairman of V.F. Corporation from 2008 to 2017, are the members who belong to this board of directors.

Sustainability and Responsibility

Lowe's sustainability governance is based in three main points: product **sustainability** by increasing the number of products responsibly sourced, for instance wood's products; **people and communities** by taking many initiatives, some connected with militaries veterans because of one of the first Lowe's owners was an USA soldier, charitable contributions and promoting employee volunteerism and non-profit partnerships; and **operational excellence** by acting responsibly, ethically, and being transparent while focused in creating value to shareholders.

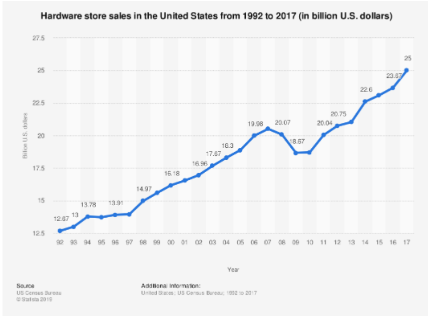

Figure 10 - Hardware Store Sales in the US

Source: US Census Bureau

Industry Overview

Home Improvement retail provides to customers products with aim to build, upgrade or renovate different type of facilities. These facilities goes from appliances, home décor, flooring, kitchen and bath items, seasonal and outdoor living, lawn & garden or electrical tools. Many products that companies of this industry sell are named DIY, meaning that customers buy products from companies and have to install and build it at home. Therefore, many companies of this industry also provide a service of equipments instalation or renovation.

Home Improvement retail in United States is characterized as a monopolistic market where only a few players dominate the market, this industry is growing year after year and it is estimated that the amount expended was approximately 400 billions $ just in United States.

Figure 11 - GDP evolution

Demand Drivers

Some factors that may influence demand on Home Improvement retail products are related with Disposable Income and GDP. If customers have more money, they will be able to spend more in upgrading their homes. These factors are influenced by macroeconomic conjectures and associated with a higher Disposable Income and GDP when expansionary policies are put in action. (Figure 11)

Figure 12 - House Price Index in US

Source: fhfa.gov

Another factor that can change demand on this type of products is related with House Price Index. Demand on Home Improvement Products have a positive correlation with this Index, because customers will be more interested in upgrading their house if its value is higher - when House Price Index is increasing. This index has a tendency to be correlated with the performance of the country, measured by GDP or employment rate, for instance. (Figure 12)

Nowadays, due to global conjectures, GDP and Disposable Income are not expected to grow in the same pace as before due to covid-19 outbreak, although it is expected to House Price Index keep its growth which counterbalance macroeconomic indicators.

Supply Outlook

Many products used in this industry are made with material like wood or marble, which are limited natural resources. As a consequence, companies have to buy many times their raw materials in countries far away from its core operation, and carry a cost of transportation of this materials.

Macroeconomic overview

Nowadays, many countries have policies with which they reward companies which have more consideration with environmental sustainability. As said before, a considerable part of costs in this industry is from extraction of some natural resources and with merchandise transportation. So, some innovation in this field towards a more environmental friendly extraction of raw materials or transportations can get not only some tax credit from governments, which represents a considerable cost for companies, but also more consideration from customers. (Figure 13)

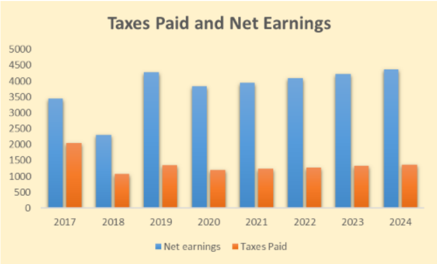

Figure 13 - Taxes Paid and Net Earnings in M$

Economically, this industry depends significantly on the economic performance of the country, as customers are more available to buy products when they have more disposable income. Some important indicators that can measure this country performance can be GDP and unemployment rate.

Indirectly, good performance of a country can also has a good impact in house price Index, and homeowners will be more interested in upgrading their home.

In technological terms, customers are looking more and more for smart technology products like sound system, security systems or garden equipment.

Porter 5 Forces

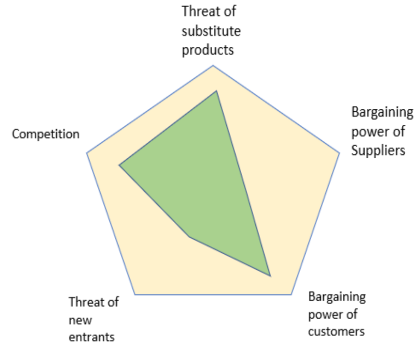

Table 6 - Porter 5 Forces Diagram

Competition in the market

Home Improvement retail is characterized by a considerable number of firms competing against each other. Besides that, customers switching costs are low, so companies have to fight each other using a better personalized service or some kind of differentiation in the product to conquer customers. Due so, competition in this market is a strong force.

Bargaining power of customers

As said before, customers almost don't have any switch costs from moving from a company to a competitor, so fidelity with a brand is closely inexistent. Moreover, this market is characterized as a monopolistic competition, so products don't have many differentiations among each other, which makes customers switching companies an easier path. Bargaining power of customers is a strong force.

Bargaining Power of Suppliers

Companies in this industry buy from his suppliers from all over the world, and majority of them aren't as big as biggest companies in Home Improvement retail, so they don't have much power to negotiate. It is usual to suppliers have exclusivity contracts with a Home Improvement retail. Bargaining power of suppliers is low.

Threat of Substitutes

There are some companies from different sectors with a big relevance that can substitute in a certain way many services that Home Improvement Industry provides, like Wal Mart, Amazon or construction companies. Home Improvement companies have to constantly innovate in order to not be surpassed by these other industries, so threat of substitutes is a strong force.

Threat of New Entrants

Even though there is not switching costs for customers, companies in this industry are already established and with a developed brand between customers. Due so, any company that want to enter in this market have to do big investments not only in stores and merchandise but also in marketing and publicity, so we consider threat of new entrants a weak force.

Peer companies

Companies in table 7 are the main retailers in the Home Improvement operating in the United States, publicly traded. Home Depot is the biggest retailer, with the highest market share and the main competitor of Lowe's (Appendix 13).

Company	Country
Home Depot	USA
Lowe's	USA
Bed Bath & Beyond Inc	USA
Floor & Decor	USA
Williams Sonoma Inc	USA

Table 7 - Main Peer Companies

Company	Revenues	Market Cap
Home Depot	$ 110 934	$ 239 116
Lowe's	$ 72 148	$ 80 761

Table 8 - Rev and Market Capitalization in 2019 in M$

Swot Analysis

Strengths	Weaknesses
• One of the market leaders; • Strong brand portfolio; • Reliable suppliers; • Strong distribution network; • Highly trained workforce;	• Marketing is not good enough; • Profitability ratio below industry; • Invest in R&D is below the fastest growing companies;
Opportunities	**Threats**
• Globalization and tourism growth; • GDP growth; • Increase on e-commerce;	• Environmental matters; • Growth of smaller competitors; • Labour costs;

Table 9 - SWOT Analysis - Appendix 15

Investment Summary

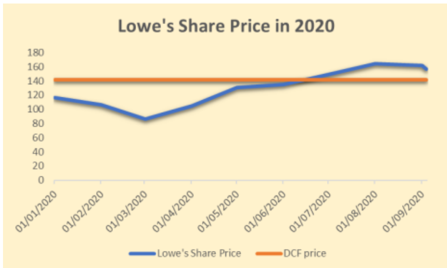

Figure 14 - Lowe's Share Price in 2020

Our final recommendation stands to sell. This recommendation is due to 14.2% downside potential of our price target calculated by our principal valuation method, DCF model, with a medium assessment risk, but also supported by Total Payout Method and Relative Valuation where we get a share price of 138$ and 129$, which means a downside Potential of 16.8% and 22% respectively when compared with share price of our reference date 30/09/2020. (Figure 14)

As Lowe's is operating in USA and Canada, two developed countries, and it is operating in a mature and established industry, we expect a small but constant growth rate for the period in analysis of 1% in first year due to phenomenon of covid-19, and 2% for remaining years.

In every forecasted year we expect increasing earnings which goes from 3840 in 2020 to 4372 Million $ in 2024 which are important for Lowe's to be capable of repaying its debt.

Valuation Methods	Absolute Value	Discount/ Premium
Share Price 30/09/2020	166	100%
DCF	142	-14.2%
Total Payout Method	138	-16.8%
Multiples Average	129	-22%

Table 10 - Valuation Models

Key Value Drivers

Some factors which have more impact in Lowe's value is related with House Price Index. Even though macroeconomic indicators such as GDP, employment rate or disposable income are not with a good performance in later months, house price has increased, and associated with this, people are more attracted to invest in their homes.

Some things that also impact this attraction is related with the housing age, 80% of homes in USA has at least 20 years which imply some kind of remodelling and renovate houses, and because millennials are for the first time looking for their first home.

DCF components	2020	2021	2022	2023	2024
FCFF	4615	4327	4411	4497	4586
WACC	3.4%	3.8%	4.0%	4.3%	4.5%
ke	8.2%	8.2%	8.2%	8.2%	8.2%
kd(1-t)	3.5%	3.7%	3.7%	3.6%	3.6%
E/V	-2.2%	2.7%	8.0%	13.6%	19.5%
D/V	102%	97%	92%	86%	80%

Table 11 - Components of DCF model

Valuation methods

Our main valuation method is DCF model where we get a value of 142$ for Lowe's, which we believe it is the most appropriate method to valuate this company.

Nonetheless, we also used Total Payout Method and Relative valuation to valuate Lowe's. To compute relative valuation we only took Home Depot as a peer company as it is the only company to operate in USA with similar structure to Lowe's. In EV/EBITDA we get a downside potential of 43% and in P/E we get a downside potential of 5%. When computed our multiple average we get an average price of 120$ per share which represents a downside potential of 25%.

With Total Payout Method we get a price per share of 138$, representing a downside potential of 15%

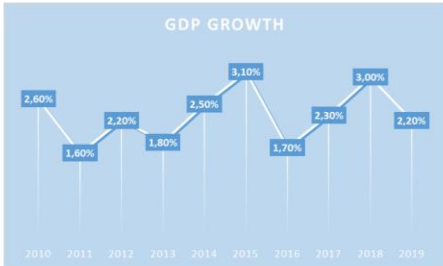

Figure 15 - GDP growth rate

Investments Risks

Main risks we identified are related to Lowe's performance and its capability to overcome new challenges that may occur, such as big companies from another sectors enter in the Home Improvement market, management decisions that can affect brand reputation, volatility in foreign currencies and political decisions.

Lowe's sales are in a certain way related with country economic performance, since customers will be more disposable to spend money in remodelling homes, or décor new homes when they have more money.

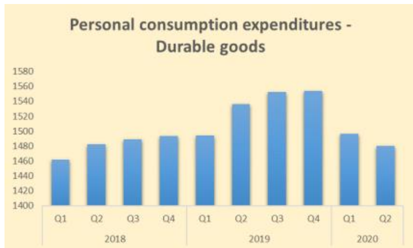

Figure 16 - Consumption exp. Durable Goods in US

Source – Census.gov

Valuation

In order to value Lowes, we decided to compute three different methods of valuation: one relative and two absolute valuations.

The absolute valuations methods chosen are Discounted Cash Flow approach as by computing the Free Cash Flow to Firms and discounting at Weighted Average Cost of Capital (WACC), and Total Payout Method where we take in consideration the amount of dividends that we expect that Lowe's will pay in 2020 as well as the amount of shares repurchase that they have scheduled for this year.

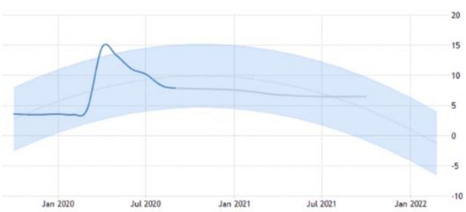

Figure 17 - Unemployment rate prediction for USA in %

Source: Trading economics.com | US Buerau of Economic Analysis

For relative valuation we used market multiples such as EV/EBITDA and P/E. To compute this valuation, we need peer companies from Home Improvement retail similar to Lowe's.

Revenue

According to Brad Hunter, an real estate consultant, Home Improvement retail is expected to keep growing sustained in 3 main factors: growth of home values which has an effect in owners leading them to invest in improving their homes; USA housing age which is on average almost 40 years, and 80% have at least 20 years which means that homes have an higher need to be renovated or remodelled; being the third factor related to the millennials that are now looking to buy their first home.

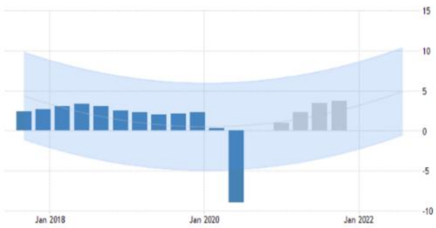

Figure 18 - GDP Annual growth for USA

Source: Tradingeconomics.com | US Bureau of Economic Analysis

Even though the amount of money that home improvement customers are ready to spend is related to the performance of the country, and nowadays USA's predictions point to some decrease in GDP and employment rate, the 3 factors that Brad Hunter pointed, still make people invest in improving their homes. Nevertheless, this predictions in employment rate point to a short term decrease in this year, followed by an recovery in the overcoming months, according to trading economics. So we assume a 1% increase in sales for 2020 and 2% for the remaining years when it is expected better macroeconomic indicators.

Analysing GDP durable goods consumption in 2020, we can see that even though there is a decrease when compared to quarters immediately before, the consumption of these goods is similar to the first quarter 2019 and quarters before. That gives us the perception that the type of durable goods that impacted in this decrease is not related with home improvement industry, which keeps its growth, in an opposite direction when compared to other industries, like car manufacturers.

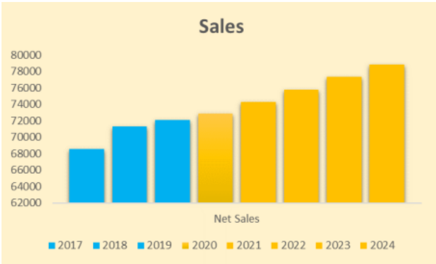

Figure 19 - Net Sales per year

Figure 20 - COGS and SG&A per year

Main Costs

It is assumed that even COGS and SG&A are going to have the same relative impact in Sales as they had in average in the years before of the forecast. COGS will be 67,8% of total Sales and SG&A 22,3% of total Sales. (Figure 20)

Capex and Depreciation & Amortization

Capital Expenditure of Lowe's is related to their existing stores, representing approximately 80% of this investment in 2019, 10% in strategic initiatives and 10% in new stores, new corporate facilities and international. Capex were approximately 1,5 billion in 2019 and 1,2 billion in 2018. Due to this, it is assumed that Lowe's will keep investing in their stores at a pace of 2,1% of Sales per year. (Figure 21)

For Depreciation & Amortization we assumed that the major refers to Depreciation of tangible assets, so this is going to be approximately 7% of previous PPE for forecast years.

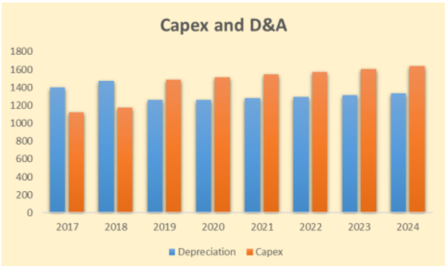

Figure 21 - Capex and D&A expenses per year

Operational Working Capital

About Operation Working Capital we can see that Lowe's has a positive flow, meaning that Inventories are higher than Accounts Payable for all period in analysis. For forecasted period, working capital has been slowly increasing, since Inventories increases at a higher pace. Net Working Capital shows some instability in first years of analysis mainly due to a decrease in Accounts Payable in 2019 of closely 600M$. For the forecasted period we assumed Lowe's has 57 Days Payable Outstanding (DPO) and 94 Days in Inventory (DIO). (Figure 22)

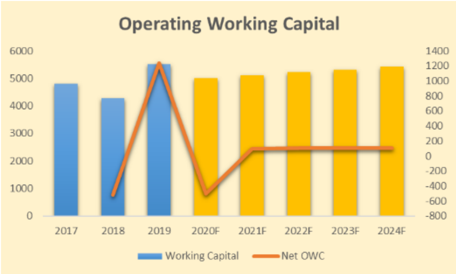

Figure 22 - Working Capital evolution

Dividends and Share Repurchase

Lowe's has a historical political of paying dividends to its shareholders since they went public in 1961. Dividend payout ratio for forecast period goes from 38%, in the first year, to 46% for the remaining period. This lower dividend payout ratio in 2020 is related with the amount of shares repurchase that Lowe's have programmed for this year of 5 billion dollars. For the remaining forecast period we assumed that Lowe's will keep repurchase shares at amount of 1 billion dollars per year. (Figure 23)

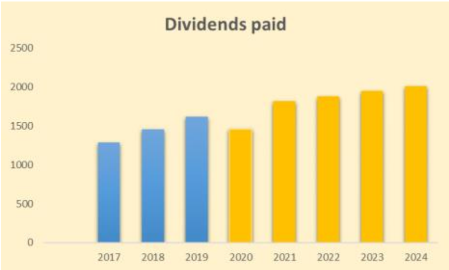

Figure 23 - Dividends paid

Debt Strategy

Lowe's had a significant amount of debt – approximately 19 billion of long and short term debt in 2019. Lowe's debt increased from 2018 to 2019, and it increases again for the first year of the forecast as well, and this can be explained by the strategy of repurchase a big amount of shares. For the first year of the forecast, as Lowe's has announced an intention of repurchase stocks on a total amount of 5 billion in 2020, we increased debt in 4,5 billion in order to Lowe's has enough cash to realize this operation. (Figure 24)

On the other hand we consider reasonable to assume that Lowe's is going to pay 1 billion per year in every year of forecast which has an outcome in the last year of forecast of 16 billion debt – a significant decrease when compared with 2020 reaching approximately the same level as in 2017 to reach the D/E target we establish to perform DCF model.

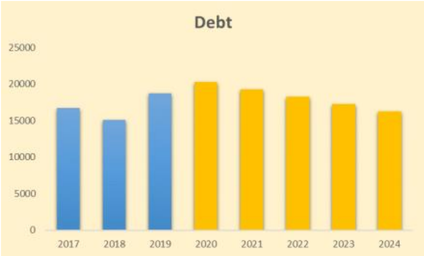

Figure 24 - Long Term Debt per year

WACC

We use CAPM approach to calculate Weight Average Cost of Capital with which we get a cost of equity of 8.2% for 2020 to 2024. For this calculation we assumed that risk free rate is the same as USA 10-year treasury bond yield, and our levered Beta was computed through historical index regressions of NYSE and Lowe's share price.

Cost of Debt after taxes goes from 3.54% in 2020 to 3.61% in 2024. To compute this cost we assumed that taxes that Lowe's is going to pay in forecast period are constant and they are the same amount of taxes paid in 2019. (Appendix 11)

t	23.9%
rf	0.6%
rm	5%
β	1.46
ke	8.2%
kd(1-t)	3.6%
WACC	4.5%
g	1%

Table 12 - Wacc components and LT Growth Rate

Terminal Value

Lowe's is an established and mature company with compound annual growth rate of Revenues in historical years of 2%. Moreover, Lowe's is one of the biggest companies in this industry and, along with Home Depot, has dominated USA market for years. We believe that Lowe's has the capability and conditions to maintain its market leadership as market grows, we estimate a long term growth rate of 1%, which is supported by our computation of reinvestment growth rate (Appendix 12).

Mutliple 1: EV/EBITDA	Values
EV/EBITDA PEER	17
Lowes EV	105381
Implied Share Price	116

Table 13 - EV/EBITDA components

Multiples Valuation

Despite Home Improvement retail is characterized by having many competitors, companies have different market shares and different structures. In this case, Lowe's only has one company which is comparable to – Home Depot

To compute Relative Valuation we decided to do two different Multiples: EV/EBITDA and P/E, and then do Multiples Average to get our final price through this method. Lowe's belongs to an industry with many competitors, although for this method we choose only companies with similar structure and level of operations. (Appendix 13)

Mutliple 2: P/E	Values
P/E PEER	25.0
Lowes EPS	5.7
Implied Share Price	141

Table 14 - P/E components

Mutliple Average	Values
EV/EBITDA Price	116
P/E Price	141
Average Price	129

Table 15 - Multiples Average Price

Total Payout Method

For this valuation method we take in consideration dividends paid in 2020 and the amount of shares that Lowe's repurchase. For this calculation we used a cost of Equity of 8.2%, calculated previously for DCF model and assumed growth rate of payout by Lowe's of 2%.

Total Payout Method	Values
ke	8%
g	2%
Implied Share Price	138

Table 16 - Total Payout Method

Financial Analysis

Liquidity

In order to value Lowe's about its liquidity we decided to compute Current Ratio. By figure 25 we can see that Assets are from 2017 to 2024 higher than Liabilities. This difference is bigger in 2017 and 2024, and in 2020 there is almost no difference, meaning that Assets are closely the same as Liabilities. This ratio shows that Lowes has good liquidity since with its assets they can face its obligations.

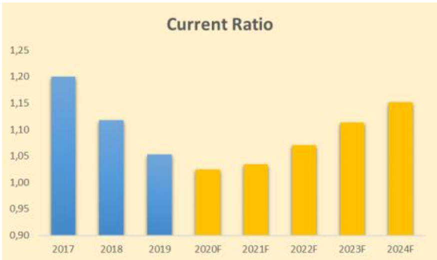

Figure 25 - Lowe's Current Ratio

Efficiency

To measure efficiency, we computed total assets turnover. In figure 26 we can state that there is a decrease tendency till the first year of forecast and an increase tendency afterwards. Even in 2020, when this ratio gets its minimum, there is 1.85 total assets turnover meaning that Sales are almost two times bigger than Assets.

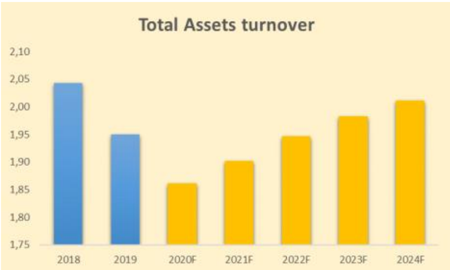

Figure 26 - Total Assets Turnover

Profitability and Solvency

About solvency we can see in debt ratio that in the first 3 years there is an irregular flow, decreasing in the first year and increase from 2018 to 2020, in this last year this increase is due to program of shares repurchase by Lowes. From 2020 to 2024 we assumed that there won't have any more debt issuance and Lowes will repay 1000 Million $ per year.

In terms of profitability, in Return on Equity there is two outstanding years, 2020 and 2021. In 2020 ROE is approximately -8 due to a big decrease in retained earnings because of repurchase shares program in that year. Consequently, this decrease also affected Equity which became negative in this year. In 2021 Equity is positive again, there isn't share repurchase as big as in the year before, but as Equity is still low ROE is approximately 6. As sales increased in every year, this change in Equity is mainly responsible for this variation in both years.

On the other hand, EBIT shows more normalized behaviour in the period in analysis. The only exception is in 2018 when EBIT has a significant break, from about 6000 Million to 4000 Million $ mainly because of increase in the main costs, even that Sales helped this fall not to be so big as they increase approximately 3 Million $.

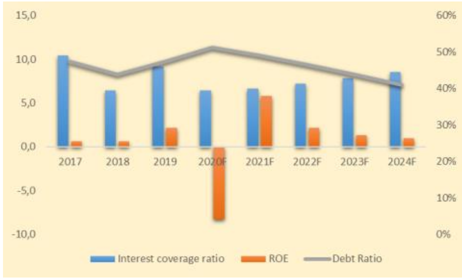

Figure 27 - Some Profitability and Solvency Ratios

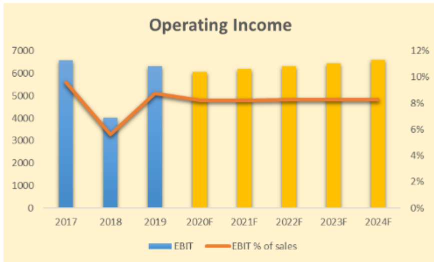

Figure 28 - EBIT % of Sales

General view

In a general view we can say that Lowe's is healthy in financial terms, since it has good indicators in Liquidity, Efficiency, Profitability and Solvency. From these financial indicators the one that is highlighted the most is the amount of debt, which was 20 Billion $ in 2020. Although this is a considerable amount of debt, Lowe's has a good capacity to repay, since its sales are more than 3 times bigger in the same year. This can be proved by the reduction of debt in the following years, reaching a level of 16 billion $ in 2024.

In the end, we can see that Lowes is profitable in the period 2017 until 2024. The behaviour of net income is noted by two major happenings: in 2018, although profits reduce almost 1 billion, soon this reduction returns to previous level; in 2020 there is another fall, even though this one is smaller than the one before.

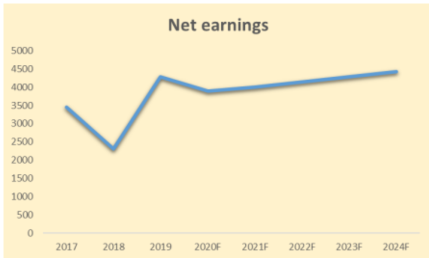

Figure 29 - Net Earnings in M$

Risk

Brand Reputation – Operational Risk (OR1)

One of the biggest risks that companies in this sector may face is related to the preferences of consumers. As said before, Home Improvement industry is characterized as a monopolistic competition, where there are many players in the market and with tendency to have similar products between them. Due to this, reputation of a company may be a crucial factor for a consumer when he is undecided which company to choose. In order to preserve brand reputation Lowe's has to choose carefully which third parties they contract to provide the services they offer to customers.

Unable to adapt to new challenges – Operational Risk (OR2)

Home Improvement retail is growing fast and customers preferences can change rapidly. Difficulties to adapt to these new challenges and customers` needs can result in a lost of customers and revenue. These difficulties can be aggravated by lack of investment in R&D by Lowe's

Environmental Issues – Political Risk (PR1)

Home Improvement companies have suppliers all over the world, so acquisition of materials is always associated with to long distance transportation issues, which lead to environmental concerns that are increasing all over the world. Many governments are even being held down by its citizens to increase legislation on these matters, and as many of this suppliers are far away from countries where Home Improvement companies have their operations, this factor leads to higher transportation expenses.

		WACC
		4.5%
LT growth rate	2.0%	200 €
	1.5%	167 €
	1.0%	142 €
	0.5%	124 €
	0.0%	110 €

Table 17 - Sensitivity Analysis of LT Growth Rate

Volatility in foreign currencies – Market Risk (MR1)

Despite majority of Lowe's operations are concentrated in USA, about 7% of Lowe's revenues in 2019 came from Canada. Some volatility in Canadian dollar can result in a loss of revenues to Lowe's.

Political Decisions – Economic Risk (ER1)

Political decisions can have strong impact in Lowe's operations. Nowadays USA have some political instability since there are elections in 2020 and racism has been discussed like it hasn't been before. These factors and Lowe's placement towards the society problems can affect company revenues.

Payment methods – Operational Risk (OR3)

Lowe's accepts a large variety of paying methods which are subject to many compliance requirements, like data security rules or certification requirements. Besides the higher probability of having potential frauds by having many payment methods, if the company fails to comply these rules it will be subject to fines and higher transaction fees.

Fail to hire and retain well trained personnel – Operational Risk (OR4)

Lowe's customers expect a certain level from company staff in senses of knowledge of the products and services the company provides. If Lowe's fails to hire or retain well trained personnel, it will have a significant impact either in sales as in costs.

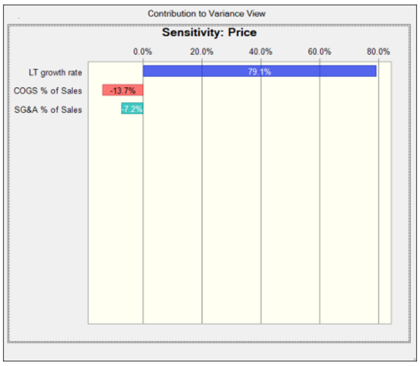

Figure 30 - Price Sensitivity

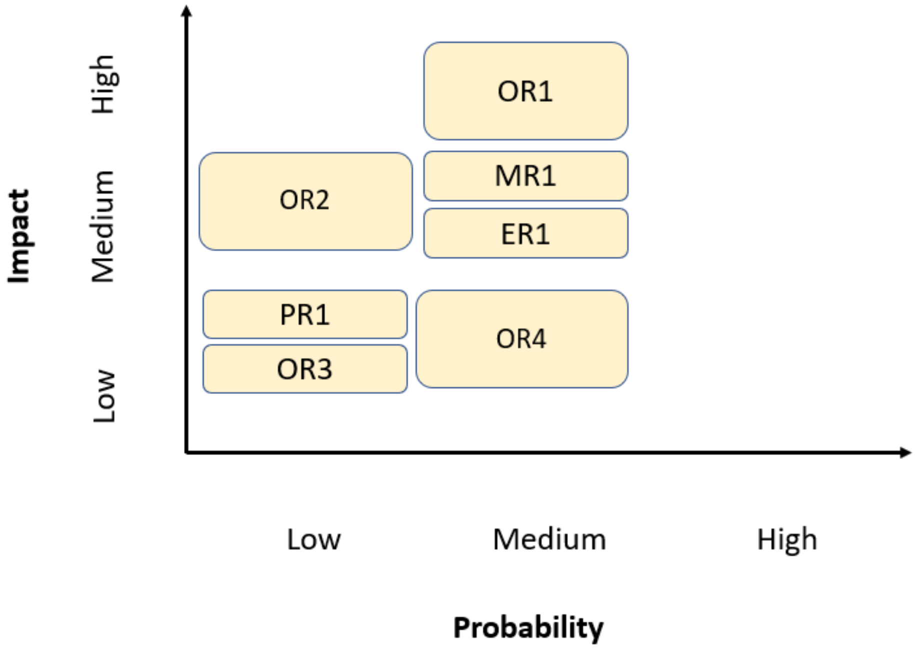

Figure 31 - Risk Matrix

Monte Carlo Simulation

We selected 3 different variables that we found sensitive when compared with Lowe's share price: Long Term Growth Rate, COGS and SG&A.

Despite the outcome of this Simulation is with a mean of 162$, the mode is of 150$. This difference can be explained by more outcomes with higher price per share, but the scenario that occurs the most is coherent with our decision to sell Lowe's shares. Our sensitivity analysis shows that Long Term Growth Rate is the variable more sensitive for Lowe's share price.

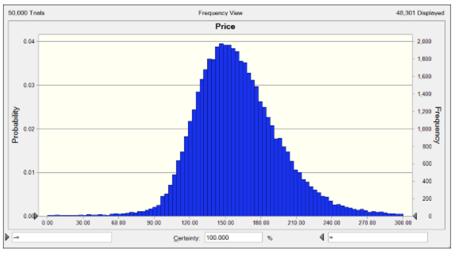

Figure 32 - Monte Carlo Simulation

Appendices

Appendix 1 - Balance sheet

Balance	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
Total Assets	**35291**	**34508**	**39471**	**37977**	**38502**	**38417**	**38424**	**38853**
Total non current Assets	**22519**	**20280**	**24153**	**23608**	**23255**	**23041**	**22940**	**22932**
Property, less accumulated depreciation	19721	18432	18669	18906	19157	19421	19699	19990
Operating lease right of use assets	0	0	3891	3113	2490	1992	1594	1275
Other assets	915	995	702	709	723	738	752	767
Goodwill	1307	303	303	303	303	303	303	303
Deferred income taxes - net	168	294	216	232	237	242	247	251
Long term investments	408	256	372	345	345	345	345	345
Total Current Assets	**12772**	**14228**	**15318**	**14369**	**15246**	**15376**	**15484**	**15921**
Other current assets	689	938	1263	1276	1301	1327	1354	1381
Merchandise inventory - net	11393	12561	13179	12746	13001	13261	13526	13797
Short term investments	102	218	160	160	160	160	160	160
Cash and cash equivalents	588	511	716	187	784	628	444	583
Total liabilities and Shareholders equity	**35291**	**34508**	**39471**	**37977**	**38502**	**38417**	**38424**	**38853**
Total shareholders equity	**5873**	**3644**	**1972**	**-504**	**626**	**1833**	**3116**	**4477**
Accumulated other comprehensive loss	11	-209	-136	0	0	0	0	0
Retained earnings	5425	3452	1727	-893	237	1444	2728	4089
Capital in excess of par value	22	0	0	7	7	7	7	7
Common stock - 0.5$ par value February 1, 2019	415	401	381	381	381	381	381	381
Total liabilities	**29418**	**30864**	**37499**	**38481**	**37876**	**36585**	**35308**	**34376**
Total non current Liabilities	**17322**	**16367**	**22317**	**25806**	**24457**	**23152**	**21887**	**20656**
Long term debt, excluding current maturities	15564	14391	16768	20268	19268	18268	17268	16268
Noncurrent operating lease liabilities	0	0	3943	3505	3115	2769	2462	2188
Deferred revenue - extended protection plans	803	827	894	867	884	902	920	938
Other liabilities	955	1149	712	1166	1189	1213	1237	1262
Total current Liabilitites	**12096**	**14497**	**15182**	**12676**	**13419**	**13432**	**13421**	**13719**
Other current liabilities	1950	2425	2581	2385	2433	2482	2531	2582
Deferred revenue	1378	1299	1219	1341	1367	1395	1423	1451
Accrued compensation and employee benefits	747	662	684	720	735	749	764	780
Accounts payable	6590	8279	7659	7729	7884	8042	8203	8367
Current operating lease liabilities	0	0	501	0	0	0	0	0
Current maturities of long term debt	294	1110	597	500	1000	765	500	540
Short term borrowings	1137	722	1941	0	0	0	0	0

Appendix 2 - Balance sheet common size

Balance	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
Total Assets	100%	100%	100%	100%	100%	100%	100%	100%
Total non current Assets	64%	59%	61%	62%	60%	60%	60%	59%
Property, less accumulated depreciation	56%	53%	47%	50%	50%	51%	51%	51%
Operating lease right of use assets	0%	0%	10%	8%	6%	5%	4%	3%
Other assets	3%	3%	2%	2%	2%	2%	2%	2%
Goodwill	4%	1%	1%	1%	1%	1%	1%	1%
Deferred income taxes - net	0%	1%	1%	1%	1%	1%	1%	1%
Long term investments	1%	1%	1%	1%	1%	1%	1%	1%
Total Current Assets	36%	41%	39%	38%	40%	40%	40%	41%
Other current assets	2%	3%	3%	3%	3%	3%	4%	4%
Merchandise inventory - net	32%	36%	33%	34%	34%	35%	35%	36%
Short term investments	0%	1%	0%	0%	0%	0%	0%	0%
Cash and cash equivalents	2%	1%	2%	0%	2%	2%	1%	2%
Total liabilities and Shareholders equity	100%	100%	100%	100%	100%	100%	100%	100%
Total shareholders equity	17%	11%	5%	-1%	2%	5%	8%	12%
Accumulated other comprehensive loss	0%	-1%	0%	0%	0%	0%	0%	0%
Retained earnings	15%	10%	4%	-2%	1%	4%	7%	11%
Capital in excess of par value	0%	0%	0%	0%	0%	0%	0%	0%
Common stock - 0.5$ par value February 1, 2019	1%	1%	1%	1%	1%	1%	1%	1%
Total liabilities	83%	89%	95%	101%	98%	95%	92%	88%
Total non current Liabilities	49%	47%	57%	68%	64%	60%	57%	53%
Long term debt, excluding current maturities	44%	42%	42%	53%	50%	48%	45%	42%
Noncurrent operating lease liabilities	0%	0%	10%	9%	8%	7%	6%	6%
Deferred revenue - extended protection plans	2%	2%	2%	2%	2%	2%	2%	2%
Other liabilities	3%	3%	2%	3%	3%	3%	3%	3%
Total current Liabilitites	34%	42%	38%	33%	35%	35%	35%	35%
Other current liabilities	6%	7%	7%	6%	6%	6%	7%	7%
Deferred revenue	4%	4%	3%	4%	4%	4%	4%	4%
Accrued compensation and employee benefits	2%	2%	2%	2%	2%	2%	2%	2%
Accounts payable	19%	24%	19%	20%	20%	21%	21%	22%
Current operating lease liabilities	0%	0%	1%	0%	0%	0%	0%	0%
Current maturities of long term debt	1%	3%	2%	1%	3%	2%	1%	1%
Short term borrowings	3%	2%	5%	0%	0%	0%	0%	0%

Appendix 3 - Income statement

Years	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
Net Sales	68619	71309	72148	72869	74327	75813	77330	78876
Cost of Sales	46185	48401	49205	49401	50389	51397	52425	53473
Gross Margin	22434	22908	22943	23468	23938	24417	24905	25403
Selling General and administrative	14444	17413	15367	16218	16542	16873	17210	17555
EBITDA	7990	5495	7576	7251	7396	7544	7694	7848
Depreciation and amortization	1404	1477	1262	1262	1278	1295	1313	1332
Operating Income	6586	4018	6314	5989	6118	6249	6382	6517
Interest - net	633	624	691	943	934	878	824	772
Loss on extinguishment of debt	464	0	0	0	0	0	0	0
Pre-tax earnings	5489	3394	5623	5045	5183	5370	5557	5745
Income tax provision	2042	1080	1342	1206	1239	1283	1328	1373
Net earnings	3447	2314	4281	3840	3944	4087	4229	4372

Appendix 4 - Income statement common size

Years	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
Net Sales	100%	100%	100%	100%	100%	100%	100%	100%
Cost of Sales	67%	68%	68%	68%	68%	68%	68%	68%
Gross Margin	33%	32%	32%	32%	32%	32%	32%	32%
Selling General and administrative	21%	24%	21%	22%	22%	22%	22%	22%
EBITDA	12%	8%	11%	10%	10%	10%	10%	10%
Depreciation and amortization	2%	2%	2%	2%	2%	2%	2%	2%
Operating Income	10%	6%	9%	8%	8%	8%	8%	8%
Interest - net	1%	1%	1%	1%	1%	1%	1%	1%
Loss on extinguishment of debt	1%	0%	0%	0%	0%	0%	0%	0%
Pre-tax earnings	8%	5%	8%	7%	7%	7%	7%	7%
Income tax provision	3%	2%	2%	2%	2%	2%	2%	2%
Net earnings	5%	3%	6%	5%	5%	5%	5%	6%

Appendix 5 - Cash Flow statement

Cash Flow Statment	**2020F**	**2021F**	**2022F**	**2023F**	**2024F**
Total cash from operations	**5396**	**5144**	**5302**	**5461**	**5621**
Net income	3840	3944	4087	4229	4372
Depreciation	1262	1278	1295	1313	1332
Change in OWC	503	-100	-102	-104	-106
Change in other current assets	-13	-26	-26	-27	-27
Change in other current liabilities	-196	48	49	50	51
Defered income taxes	232	237	242	247	251
Total cash from investing	**-1499**	**-1529**	**-1559**	**-1591**	**-1622**
Capital expenditure	-1499	-1529	-1559	-1591	-1622
Total cash from financing	**-2959**	**-3814**	**-3880**	**-3945**	**-4011**
Debt repayment	-1000	-1000	-1000	-1000	-1000
Shares Repurchase	-5000	-1000	-1000	-1000	-1000
Dividends paid	-1459	-1814	-1880	-1945	-2011
Issuance debt	4500	0	0	0	0

Appendix 6 - Cash Flow common size

Cash Flow Statment	**2020F**	**2021F**	**2022F**	**2023F**	**2024F**
Total cash from operations	**100%**	**100%**	**100%**	**100%**	**100%**
Net income	**71%**	**77%**	**77%**	**77%**	**78%**
Depreciation	**23%**	**25%**	**24%**	**24%**	**24%**
Change in OWC	**9%**	**-2%**	**-2%**	**-2%**	**-2%**
Change in other current assets	**0%**	**0%**	**0%**	**0%**	**0%**
Change in other current liabilities	**-4%**	**1%**	**1%**	**1%**	**1%**
Defered income taxes	**4%**	**5%**	**5%**	**5%**	**4%**
Total cash from investing	**-28%**	**-30%**	**-29%**	**-29%**	**-29%**
Capital expenditure	**-28%**	**-30%**	**-29%**	**-29%**	**-29%**
Total cash from financing	**-55%**	**-74%**	**-73%**	**-72%**	**-71%**
Debt repayment	**-19%**	**-19%**	**-19%**	**-18%**	**-18%**
Shares Repurchase	**-93%**	**-19%**	**-19%**	**-18%**	**-18%**
Dividends paid	**-27%**	**-35%**	**-35%**	**-36%**	**-36%**
Issuance debt	**83%**	**0%**	**0%**	**0%**	**0%**

Appendix 7 - Key financial ratios

Key Financial Ratios	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
Efficiency Ratios								
Fixed Assets Turnover	3.3	3.8	3.8	3.8	3.8	3.8	3.9	3.9
Total Assets Turnover	1.9	2.1	1.8	1.9	1.9	2.0	2.0	2.0
Inventory Turnover	4.1	3.9	3.7	3.9	3.9	3.9	3.9	3.9
Days in Inventory (days)	90	95	98	94	94	94	94	94
Payables Turnover	7.0	5.8	6.4	6.4	6.4	6.4	6.4	6.4
Payables Period (days)	52	62	57	57	57	57	57	57
Net Operating Cycle or Cash Cycle (days)	38	32	41	37	37	37	37	37
Operating Cycle	90	95	98	94	94	94	94	94
Solvency Ratios								
Long and short-term Debt Ratio	47.3%	43.8%	47.4%	53.4%	50.0%	47.6%	44.9%	41.9%
Long-term Debt Ratio	44.1%	41.7%	42.5%	53.4%	50.0%	47.6%	44.9%	41.9%
Debt to Equity Ratio	5.01	8.47	19.02	-76.33	60.52	19.96	11.33	7.68
Equity Multiplier	6.01	9.47	20.02	-75.33	61.52	20.96	12.33	8.68
Debt Ratio	0.83	0.89	0.95	1.01	0.98	0.95	0.92	0.88
Net Debt to EBITDA	2.02	2.66	2.38	2.77	2.50	2.34	2.19	2.00
Interest Coverage Ratio	10.4	6.44	9.14	6.35	6.55	7.11	7.74	8.45
Liquidity Ratios								
Current Ratio (x)	1.06	0.98	1.01	1.13	1.14	1.14	1.15	1.16
Cash Ratio (x)	0.05	0.04	0.05	0.01	0.06	0.05	0.03	0.04
Profitability Ratios								
EBITDA Margin	11.6%	7.7%	10.5%	10%	10%	10%	10%	10%
EBIT Margin	9.6%	5.6%	8.8%	8.2%	8.2%	8.2%	8.3%	8.3%
Net Profit Margin	5.0%	3.2%	5.9%	5.3%	5.3%	5.4%	5.5%	5.5%
ROA	9.8%	6.7%	10.8%	10.1%	10.2%	10.6%	11.0%	11.3%
ROIC	19%	13%	20%	19%	19%	19%	19%	19%
NOPAT	5,012	3,058	4,805	4,557	4,656	4,755	4,856	4,959
Invested Capital	25,831	23,017	24,492	24,225	24,577	24,943	25,326	25,723
ROCE	28.4%	20.1%	26.0%	23.7%	24.4%	25.0%	25.5%	25.9%
Capital Employed	23,195	20,011	24,289	25,302	25,083	24,985	25,003	25,134
ROE	58.7%	63.5%	217.1%	-761.5%	630.3%	223.0%	135.7%	97.6%
NI / S	5.0%	3.2%	5.9%	5.3%	5.3%	5.4%	5.5%	5.5%
S / A	194.4%	206.6%	182.8%	191.9%	193.0%	197.3%	201.3%	203.0%
A / E	600.9%	947.0%	2001.6%	-7532.5%	6152.2%	2096.3%	1233.0%	867.8%
SG&A/Sales	21.0%	24.4%	21.3%	22.3%	22.3%	22.3%	22.3%	22.3%
Value Creation and Cash Flow Ratios								
Economic Value Added (EVA) (M€)				4,123	2,180	3,819	3,525	3,546
Debt Coverage	20.6%	15.3%	22.9%	18.9%	20.5%	22.4%	24.5%	26.9%
Cash to Income			0.68	0.90	0.84	0.85	0.86	0.86
Earnings Quality			0.63	1.17	0.97	0.97	0.97	0.97

Appendix 8 - Key Assumptions

Description	Units	2020	2021	2022	2023	2024	Assumption
Sales	%	1%	2%	2%	2%	2%	We assumed a lower increase in sales for 2020 due to covid 19 and instability it may cause when compared with following years
COGS	%	68%	68%	68%	68%	68%	We assumed that COGS will remain with the same cost as years before
SG&A	%	22%	22%	22%	22%	22%	We assumed that SG&A will remain with the same cost as years before
D&A previous PPE	%	6.8%	6.8%	6.8%	6.8%	6.8%	We assumed that D&A % of previous PPEwill be the same as 2019 for forecasted years
Taxes	%	23.9%	23.9%	23.9%	23.9%	23.9%	We assumed that taxes paid for forecasted years are the same % as in 2019
interest rate	%	4%	4%	4%	4%	4%	We assumed that interest rate will remain the same
Dividend payout ratio	%	38%	46%	46%	46%	46%	As Lowe's has programmed a big amount of shares for 2020, we estimate the smaller payout ratio that Lowe's had in 3 years before, and for the remaining years its average
Share Repurchase	$	5000	1000	1000	1000	1000	Lowe's have schedule to purchase 5000M$ in shares for 2020, for the others forecasted years we assumed that they will buy 1000M$
Capex % of Sales	%	2.1%	2.1%	2.1%	2.1%	2.1%	We assumed that capex % of sales will be 2.1% for forecasted years, same % as in 2019
PPE	$	18906	19157	19421	19699	19990	PPE will increase at a pace of Capex - D&A
Inventories % COGS	%	25.8%	25.8%	25.8%	25.8%	25.8%	We estimate that Inventories have the same proportion of COGS as it had in 2019
Trade Creditors (DPO)	days	57	57	57	57	57	We estimate that DPO have the same ration for forecasted years as it had in 2019
Retained Earnings	$	-893	237	1444	2728	4089	More information in appendix 9
LT Debt	$	16768	20268	19268	18268	17268	More information in appendix 10

Appendix 9 - Retained earnings assumptions

Retained Earnings	2019	2020F	2021F	2022F	2023F	2024F
Beginning balance		1727	-893	237	1444	2728
Net income		3840	3944	4087	4229	4372
Share Repurchase		5000	1000	1000	1000	1000
Dividends paid		1459	1814	1880	1945	2011
Ending balance	1727	-893	237	1444	2728	4089

Retained Earnings and Long Term Debt were affected in 2020 due to a share repurchase program of Lowes, where they had scheduled in 2019 to 2020 to spend 5 billion $ in shares repurchase. Taking this in consideration, and that Lowe's in 2019 has already done a similar operation and they issued closely the same amount in debt, we assumed that to realize this program they need to issue 4.5 billion $ in debt.

Appendix 10 - Long term Debt assumptions

Borrowings (long term)	2019	2020F	2021F	2022F	2023F	2024F
Beginning balance		16768	20268	19268	18268	17268
Repayment		1000	1000	1000	1000	1000
Issuance		4500	0	0	0	0
Ending balace	16768	20268	19268	18268	17268	16268
Interest rate		4%	4%	4%	4%	4%
Interest amount		741	791	751	711	671

Appendix 11 - DCF components

	2020F	2021F	2022F	2023F	2024F
Marginal tax rate	23.90%	23.90%	23.90%	23.90%	23.90%
Country Risk	0%	0%	0%	0%	0%
Risk free rate	0.6%	0.6%	0.6%	0.6%	0.6%
Market risk premium	5.2%	5.2%	5.2%	5.2%	5.2%
Levered beta	1.46	1.46	1.46	1.46	1.46
Cost of equity	8.2%	8.2%	8.2%	8.2%	8.2%
Cost of debt pre-tax	4.7%	4.8%	4.8%	4.8%	4.7%
After tax cost of debt using marginal tax rate	3.54%	3.69%	3.66%	3.63%	3.61%
E/V	-2.2%	2.7%	8.0%	13.6%	19.5%
D/V	102.2%	97.3%	92.0%	86.4%	80.5%
WACC	**3.44%**	**3.81%**	**4.03%**	**4.26%**	**4.51%**

Lowe's has its sales mainly in USA, so to get risk free rate we took USA 10 year bond which was at 0.6%. To calculate Levered Beta, as we have a negative Equity in 2020, we decided that the approach which we can get the best estimation for Beta was doing a regression on NYSE and Lowe's monthly returns for the past 5 years, where we get a Levered Beta of 1.42. After calculating this beta we did an average with Levered Beta from Yahoo Finance, and get to final result 1.46.

Appendix 12 - DCF model

DCF Model	Results
LT growth rate	1%
Sum of PV FCFF TILL 2020	19688
PV of TV	105732
Enterprise Value	125420
Net Debt	17993
Equity Value	107427
Total shares outstanding	755000
Implied share price	142.3
Actual share price (9 Sep 2020)	158
Premium/(discount)	-9.9%

DCF Model is our main model, and to calculate Long Term Growth Rate, as we used Free Cash Flow to Firm, was computing:

*FCFF g = Reinvestment rate * ROIC*

With this formula we get an average LT growth Rate of 1.4%. For DCF computations we used 1% LT growth rate for a more pessimistic point of view as we are living in an uncertain time due to covid-19.

Appendix 13 - Relative Valuation

Mutliple 1: EV/EBITDA	M$
EV/EBITDA PEER	17
Lowes EBITDA	6314
Lowes EV	105381
Net Debt	17993
Equity Value	87388
No. Shares Outstanding	755000
Implied Share Price	116
Actual Share Price (30 Sep 2020)	166
Premium/(Discount)	-30%

Mutliple 2: P/E	**Values**
P/E PEER	25
Lowes EPS	5,7
Implied Share Price	141
Actual Share Price (30 Sep 2020)	166
Premium/(Discount)	-15%

Mutliple Average	**Values**
EV/EBITDA Price	116
P/E Price	141
Average Price	129
Actual Share Price (30 Sep 2020)	166
Downside Potential	-22%

To compute Relative Valuation we had to choose peer companies. Even though Lowe's competes in a market with many producers, only Home Depot has a similar structure and level of operations, so we restricted our Peers in Relative Valuation to Home Depot. When analyzing revenues of the remaining peer companies identified in Industry Overview, we state that Lowe's sales are 65% of Home Depot sales, and are more that 6 times higher than the third biggest home improvement retail company.

Company	**Country**	**Revenues M$**	**% Lowe's revenues**
Home Depot	**USA**	**110,225**	**65%**
Lowe's	**USA**	**72,148**	**100%**
Bed Bath & Beyond Inc	**USA**	**11,158**	**647%**
Floor & Decor	**USA**	**2,045**	**3528%**
Williams Sonoma Inc	**USA**	**5,898**	**1223%**

Appendix 14 - Sensitivity Analysis

WW

				WACC		
	142.3	3.4%	3.9%	4.51%	4.9%	5.4%
LT growth Rate	2%	375 €	270 €	200 €	169 €	141 €
	1.5%	276 €	214 €	167 €	144 €	123 €
	1%	218 €	177 €	142 €	125 €	108 €
	0.5%	180 €	150 €	124 €	111 €	97 €
	0.0%	154 €	131 €	110 €	99 €	88 €

Appendix 15 - Recommendation System

Level of Risk	SELL	REDUCE	HOLD/NEUTRAL	BUY	STRONG BUY
High Risk	0%≤	>0% & ≤10%	>10% & ≤20%	>20% & ≤45%	>45%
Medium Risk	-5%≤	>-5% & ≤5%	>5% & ≤15%	>15% & ≤30%	>30%
Low Risk	-10%≤	>-10% & ≤0%	>0% & ≤10%	>10% & ≤20%	>20%

Source: Equity Research Course

Appendix 16 - Swot Analysis

Strengths	Weaknesses
• One of the market leaders; • Strong brand portfolio; • Reliable suppliers; • Strong distribution network; • Highly trained workforce;	• Marketing is not good enough; • Profitability ratio below industry; • Invest in R&D is below the fastest growing companies;
Opportunities	**Threats**
• Globalization and tourism growth; • GDP growth; • Increase on e-commerce;	• Environmental matters; • Growth of smaller competitors; • Labour costs;

One of the biggest strengths of Lowe's is related with its market share. Lowe's is already second biggest company in Home Improvement retail in USA, linked with a good relationship with its customers.

About weaknesses Lowe's has a low investment in R&D when compared with another growing companies, what can be a problem when some home improvement products are related with smart technology. Profitability ratios of Lowe's are also smaller than industry average.

Main opportunities to Lowe's are globalization and opportunity of enter in new markets, such as China or India which are emergent countries and where they can increase their revenues.

Threats can be related with environmental matters, that Lowe's can be under restrictions as they use natural resources like wood and marble, and an increase of labour costs as they have a well-trained staff.

Database and Websites

Damodaran online. Home page for Aswath Damodaran Available at: http://pages.stern.nyu.edu/~adamodar/

Federal Housing Finance Agency. Available at: https://www.fhfa.gov/DataTools/Downloads/Pages/HPI-MSAs.aspx#HPIAnalysis

Lowe's Companies Inc. Annual Report 2017. Available at: https://www.annualreports.com/Company/lowes-companies-inc

Lowe's Companies Inc. Annual Report 2018. Available at: https://www.annualreports.com/Company/lowes-companies-inc

Lowe's Companies Inc. Annual Report 2019. Available at: https://www.annualreports.com/Company/lowes-companies-inc

Statista. Home Improvement. Available at: https://www.statista.com/topics/1732/home-improvement/

Trading economics. GDP. Available at: https://tradingeconomics.com/united-states/gdp

Trading economics. Housing price index. Available at: https://tradingeconomics.com/united-states/housing-index

US Bureau of Economic Analysis. Available at: https://www.bea.gov/news/2020/gross-domestic-product-industry-1st-quarter-2020

Yahoo finance. Lowes. Available at: https://finance.yahoo.com/quote/LOW/

World Bank group. Available at: https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=US